Service Schematics

NOKIA 6680

Introduction

IMPORTANT:

This document is intended for use by authorized NOKIA service centers only.

“Service Schematics” was created with focus on customer care.
The purpose of this document is to provide further technical repair information for NOKIA mobile phones on Level 3/4 service activities.
It contains additional information such as e.g. “Component finder”, “Frequency band table” or “Antenna switch table”.
The “Signal overview” page gives a good and fast overview about the most important signals and voltages on board.
Saving process time and improving the repair quality is the aim of this document.
It is to be used additionally to the service manual and other training or service information such as Service Bulletins.

All measurements were made using following equipment:

Nokia repair SW	: Phoenix version 2004.46.6.77
Oscilloscope	: Fluke PM 3380A/B
Spectrum Analyzer	: Advantest R3162 with an analog probe
RF-Generator / GSM Tester	: Rhode & Schwarz CMU 200
Multimeter	: Fluke 73 Series II

While every endeavour has been made to ensure the accuracy of this document, some errors may exist. If the reader finds any errors, NOKIA should be notified in writing.

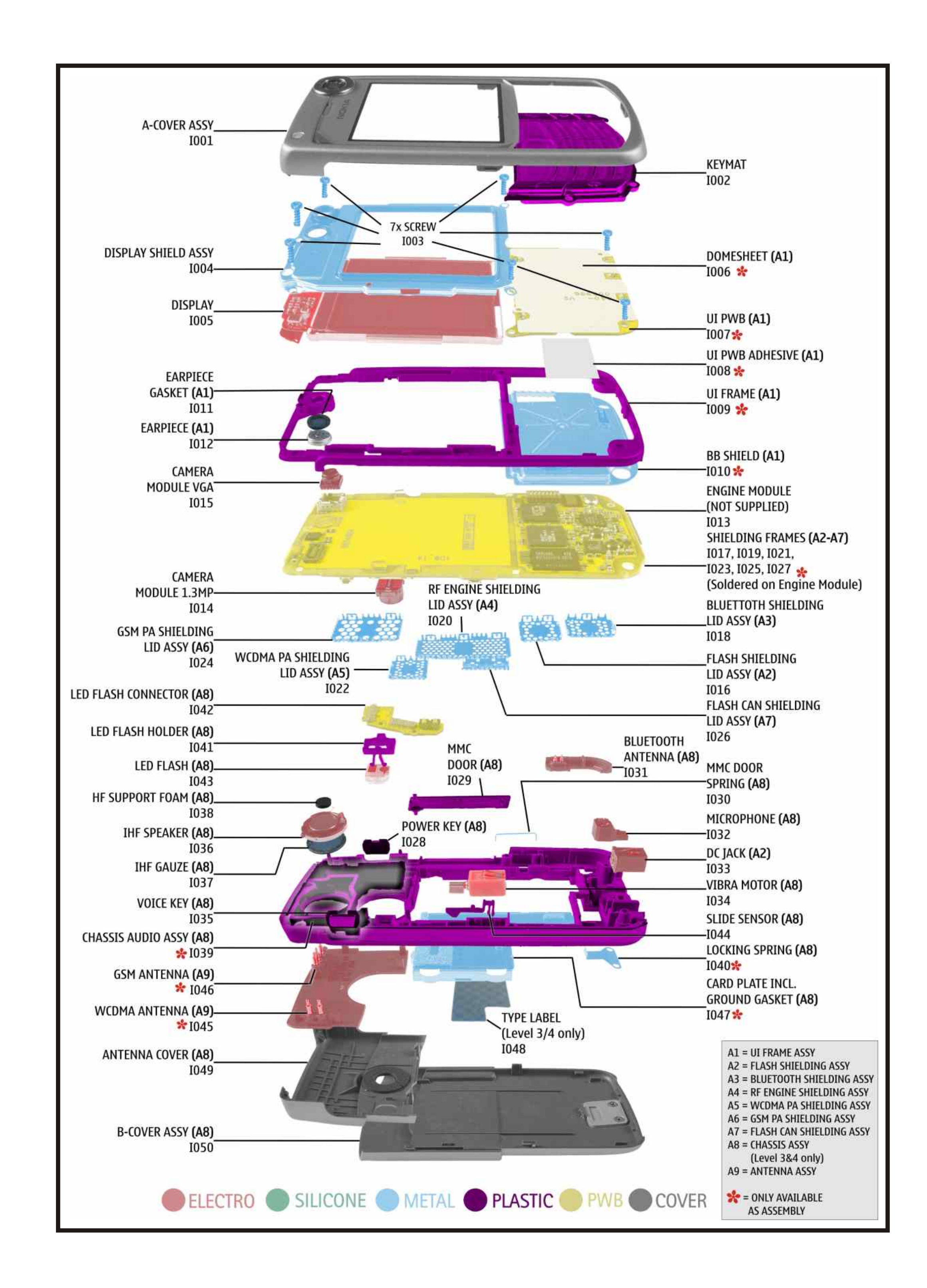
Please send E-Mail to: training.sace@nokia.com

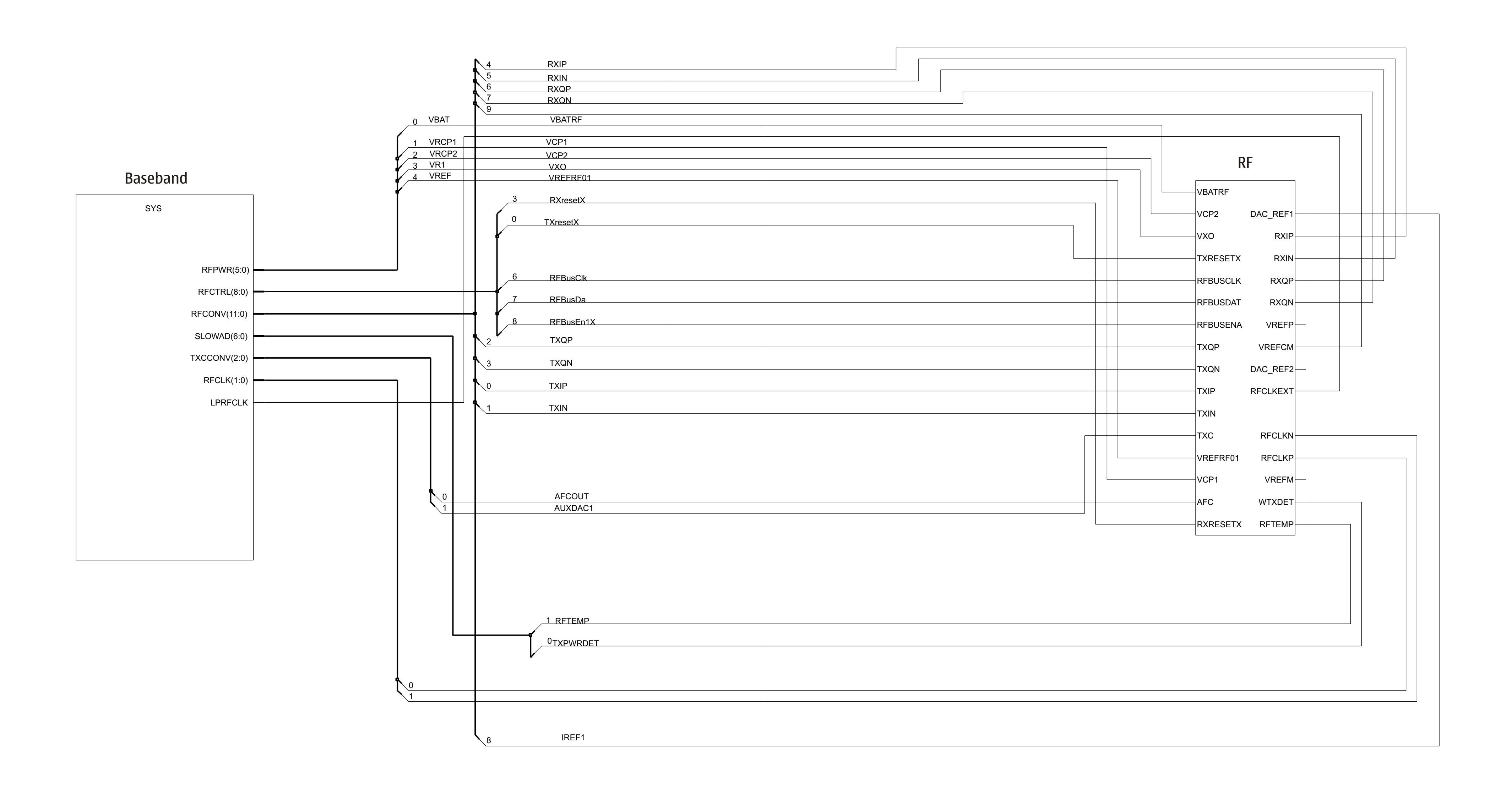
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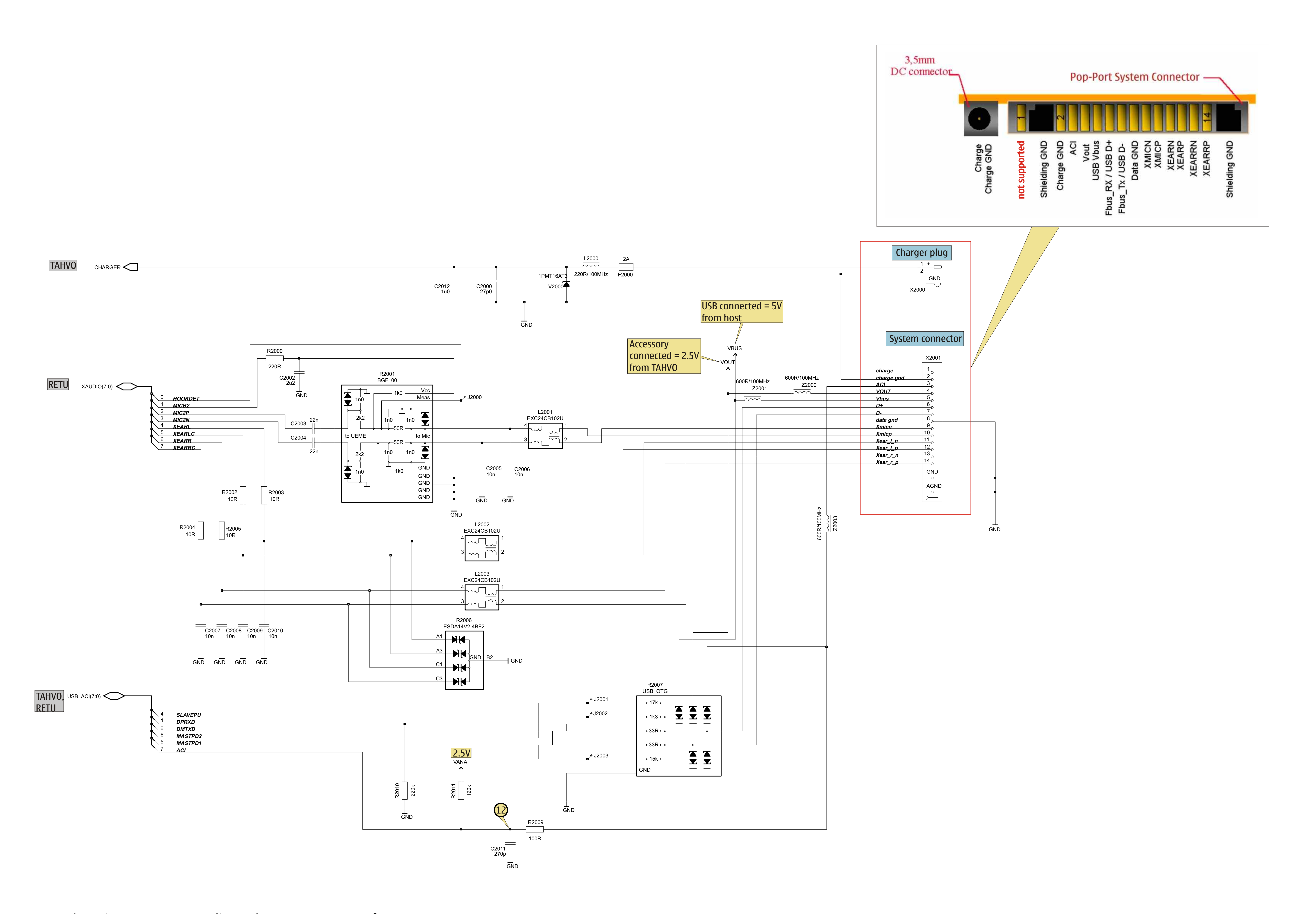


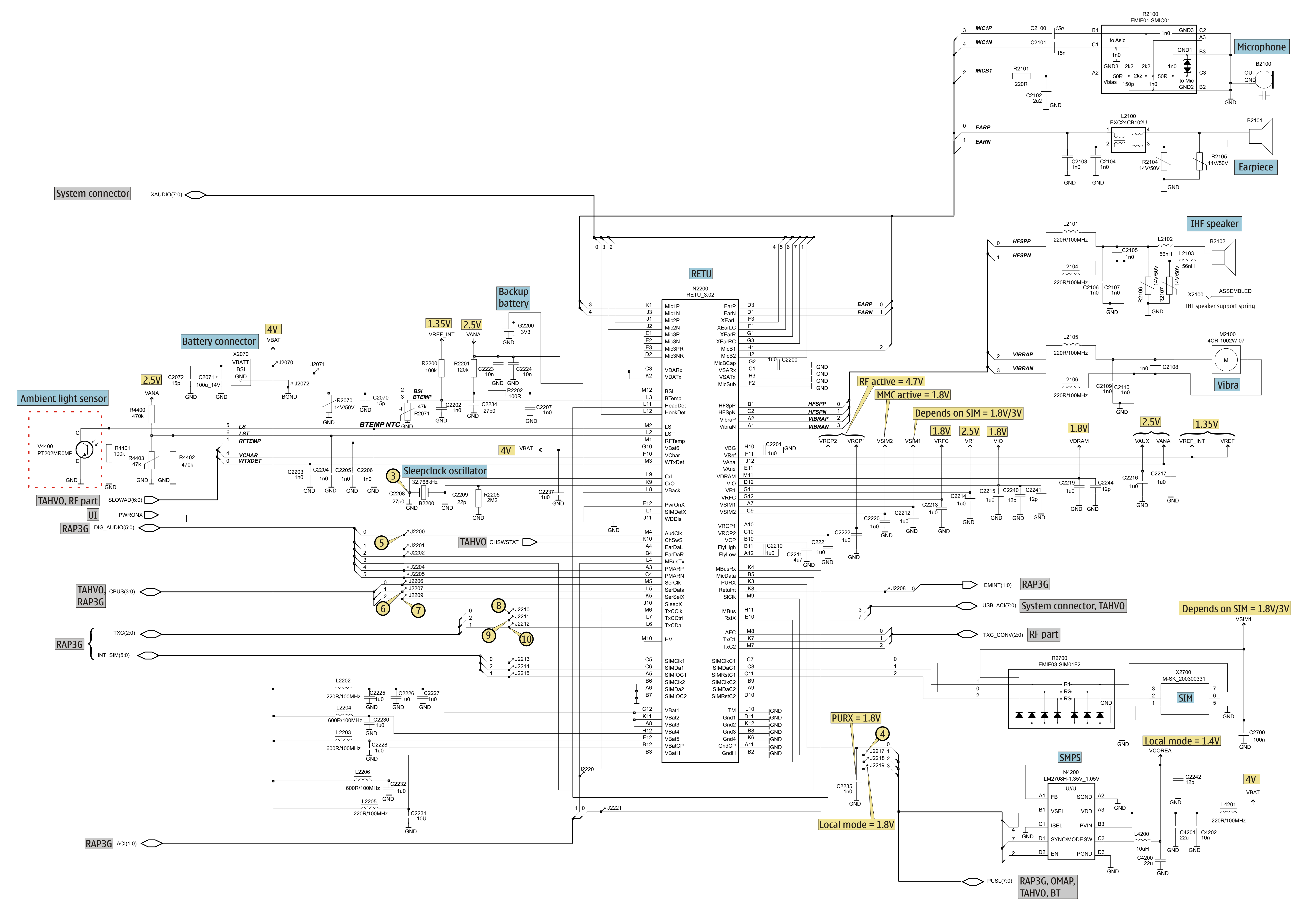
Table of Contents	Page

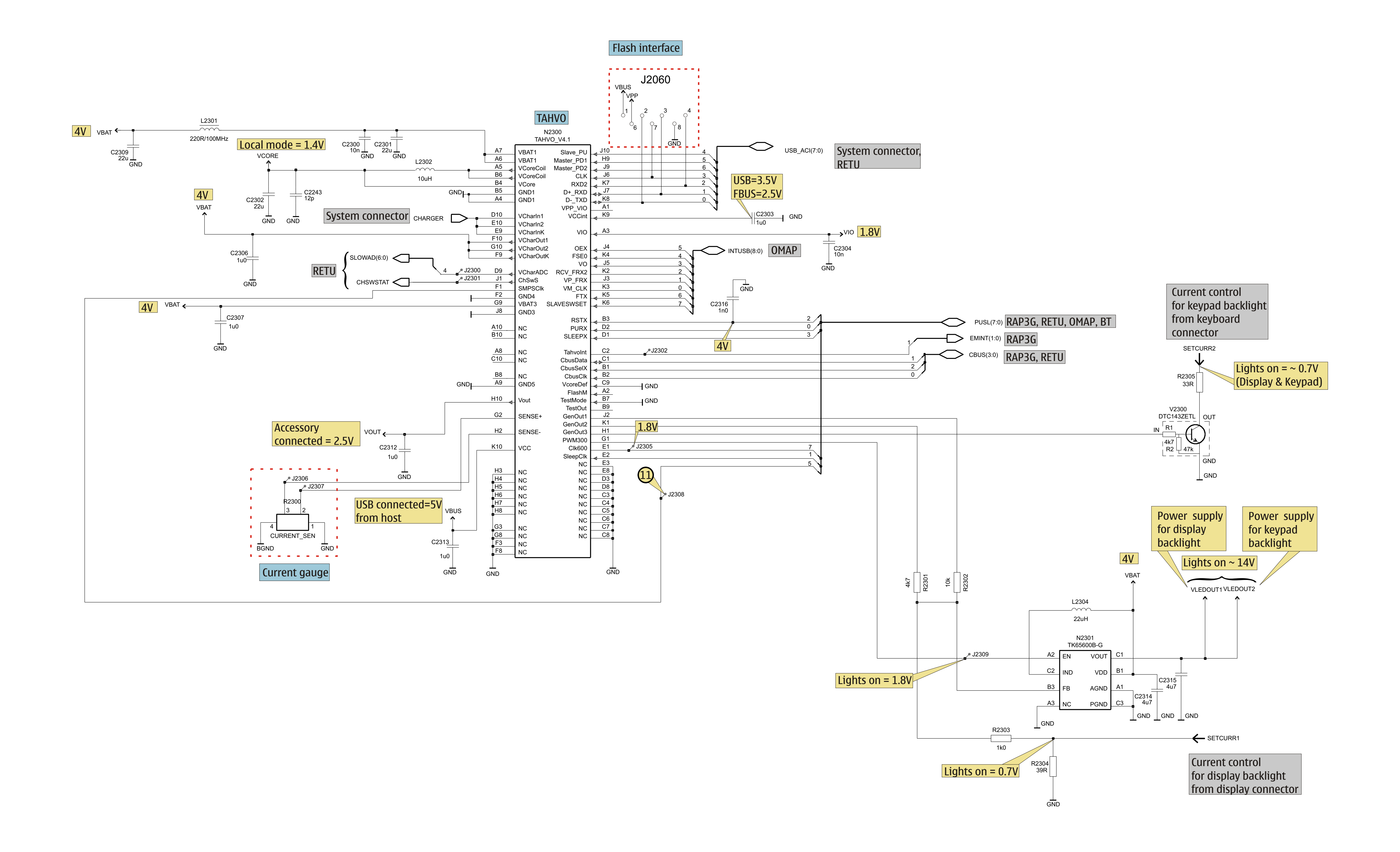
Exploded view and component disposal

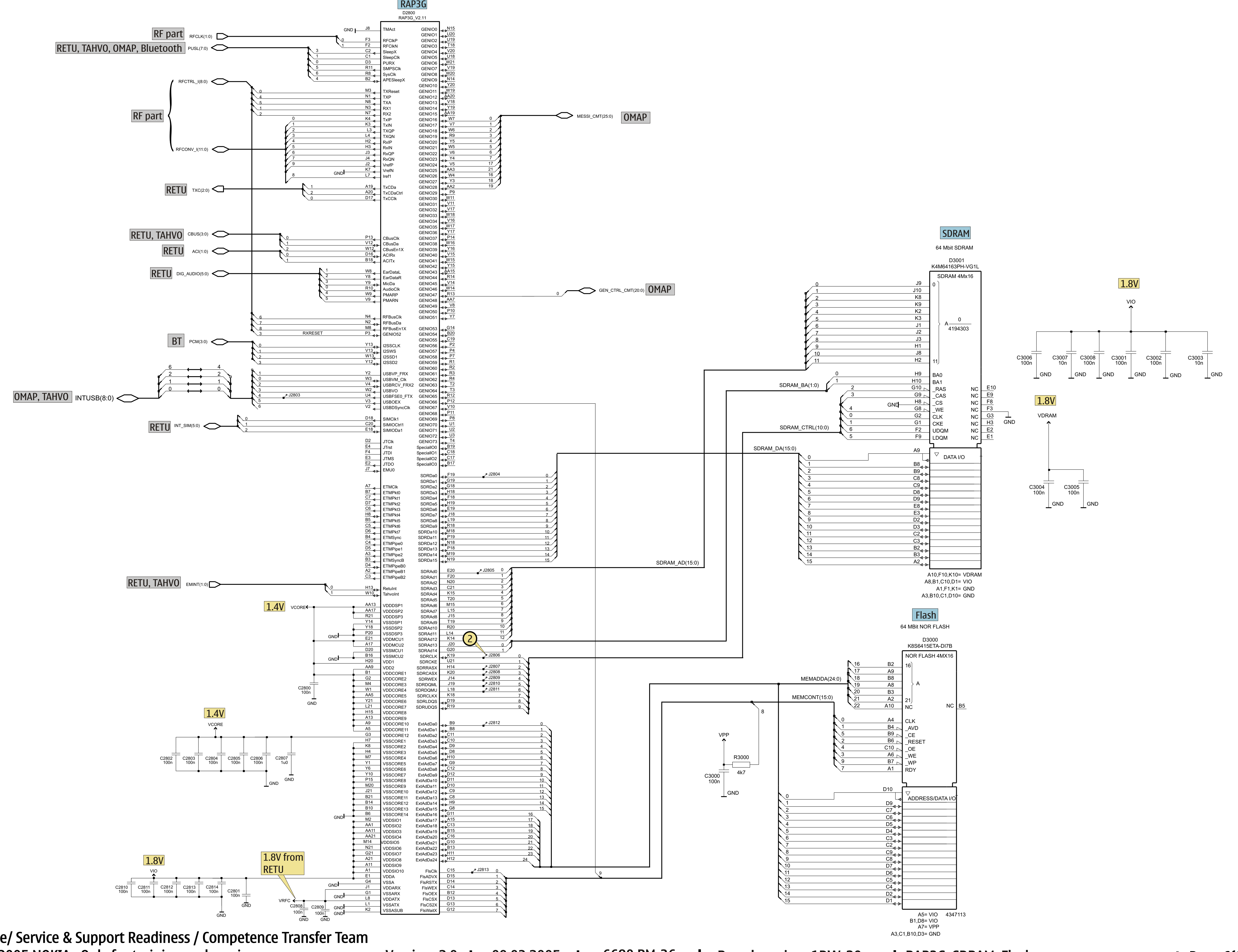


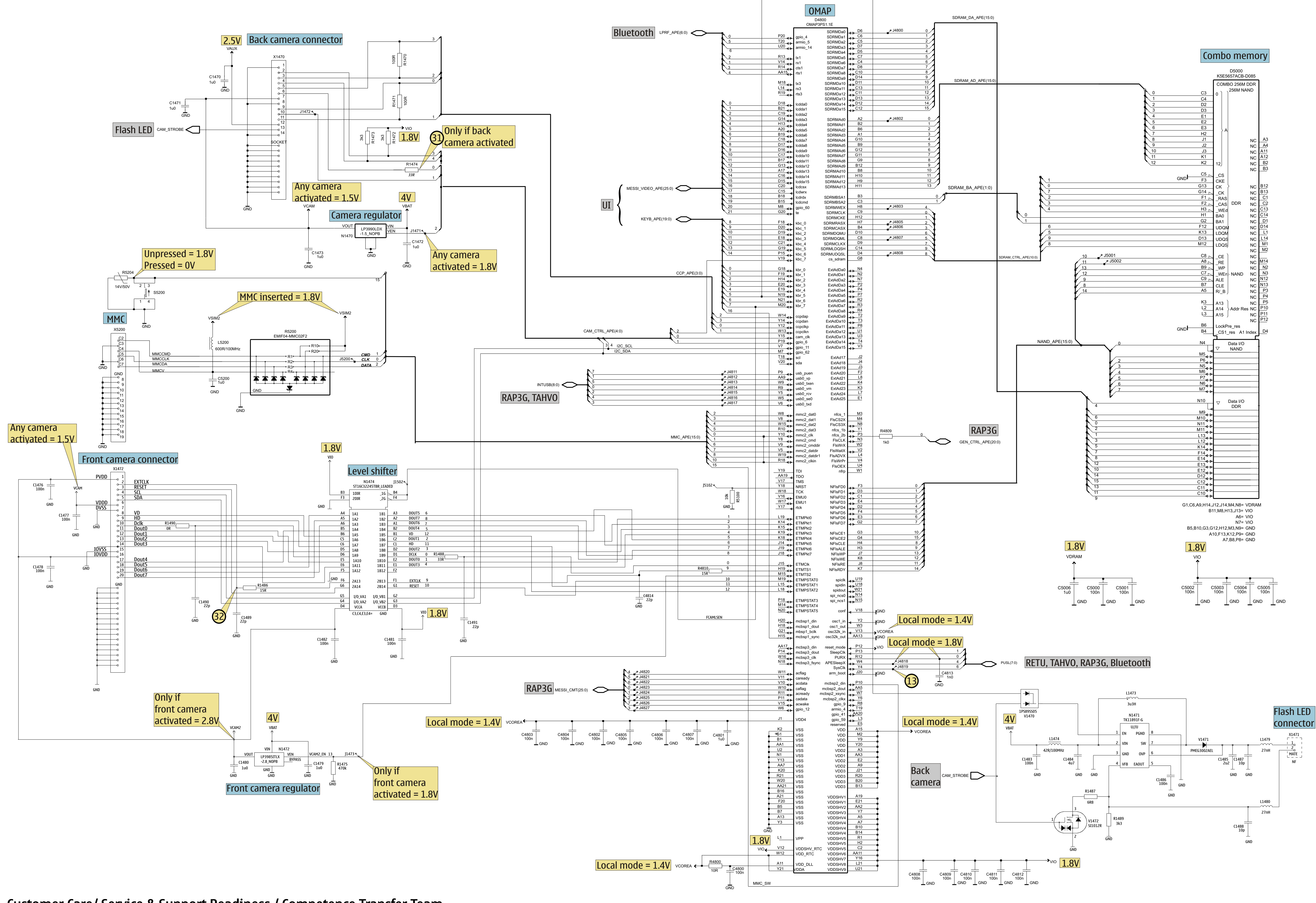

Baseband
SYS
RFPWR(5:0)
RFCTRL(8:0)
RFCONV(11:0)
SLOWAD(6:0)
TXCCONV(2:0)
RFCLK(1:0)
LPRFCLK
RF
VBATRF
VCP2
VXO
TXRESETX
RFBUSCLK
RFBUSDAT
RFBUSENA
TXQP
TXQN
TXIP
TXIN
TXC
VREFRF01
VCP1
AFC
RXRESETX
DAC_REF1
RXIP
RXIN
RXQP
RXQN
VREFP
VREFCM
DAC_REF2
RFCLKEXT
RFCLKN
RFCLKP
VREFM
WTXDET
RFTEMP
VBAT
VRCP1
VRCP2
VR1
VREF
VBATRF
VCP1
VCP2
VXO
VREFRF01
RXresetX
TXresetX
RFBusClk
RFBusDa
RFBusEn1X
TXQP
TXQN
TXIP
TXIN
AFCOUT
AUXDAC1
RFTEMP
TXPWRDET
IREF1


3,5mm DC connector
Pop-Port System Connector
Charge
Charge GND
not supported
Shielding GND
Charge GND
ACI
Vout
USB Vbus
Fbus_RX / USB D+
Fbus_Tx / USB D-
Data GND
XMICN
XMICP
XEARN
XEARP
XEARRN
XEARRP
Shielding GND
Charger plug
System connector
USB connected = 5V from host
Accessory connected = 2.5V from TAHVO
TAHVO
CHARGER
RETU
XAUDIO(7:0)
HOOKDET
MICB2
MIC2P
MIC2N
XEARL
XEARLC
XEARR
XEARRC
TAHVO, RETU
USB_ACI(7:0)
SLAVEPU
DPRXD
DMTXD
MASTPD2
MASTPD1
ACI
2.5V
VANA
R2001 BGF100
L2001 EXC24CB102U
L2002 EXC24CB102U
L2003 EXC24CB102U
R2006 ESDA14V2-4BF2
R2007 USB_OTG
X2000
X2001
GND

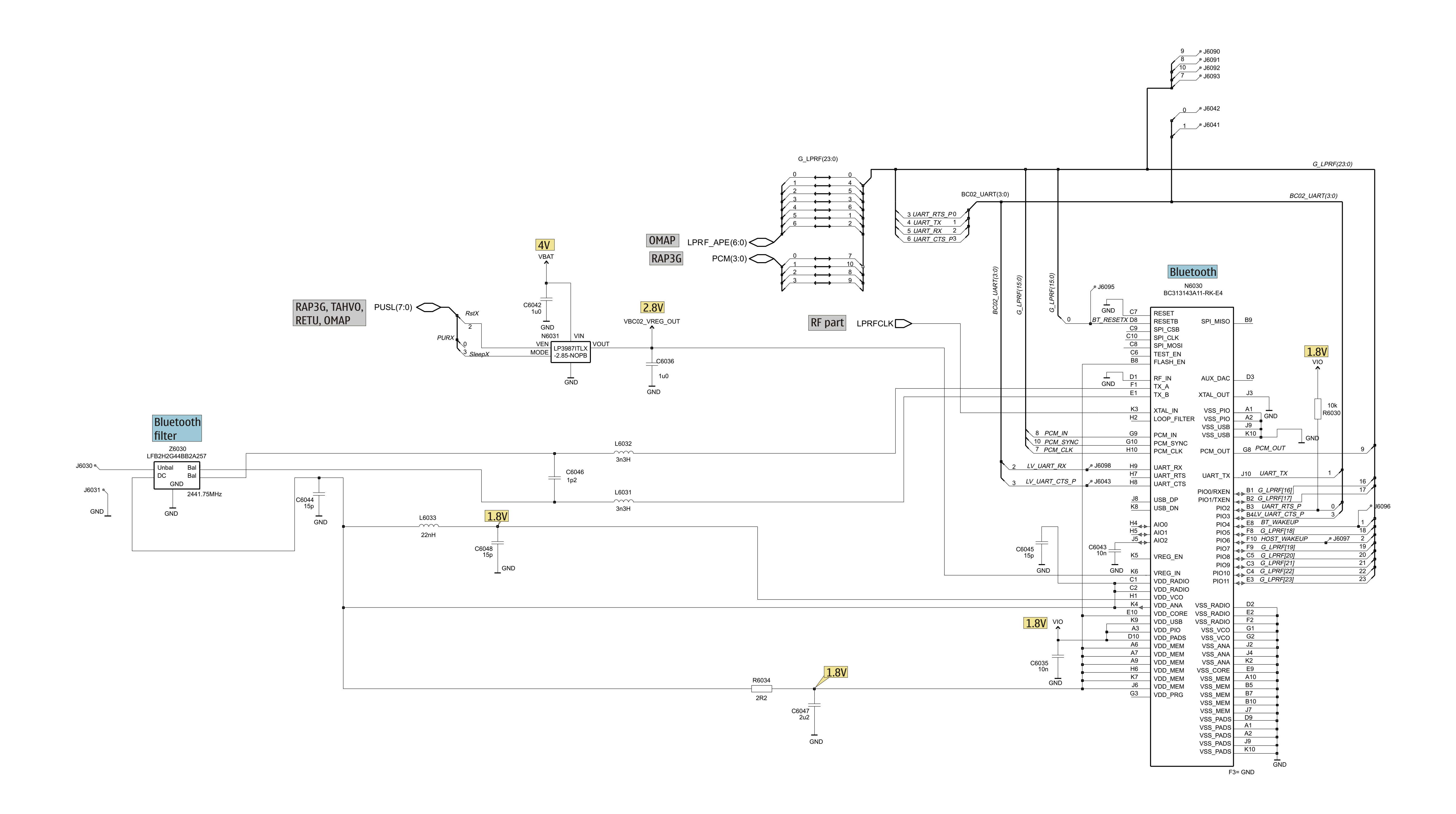

Microphone
Earpiece
IHF speaker
Vibra
System connector
RETU
N2200
RETU_3.02
Backup battery
Battery connector
Ambient light sensor
TAHVO, RF part
UI
RAP3G
Sleepclock oscillator
32.768kHz
TAHVO
TAHVO, RAP3G
RF active = 4.7V
MMC active = 1.8V
Depends on SIM = 1.8V/3V
System connector, TAHVO
RF part
SIM
PURX = 1.8V
Local mode = 1.8V
Local mode = 1.4V
SMPS
RAP3G, OMAP, TAHVO, BT
4V
1.35V
2.5V
1.8V
VBAT
VANA
VREF_INT
R2100
EMIF01-SMIC01
B2100
L2100
EXC24CB102U
B2101
B2102
M2100
4CR-1002W-07
R2700
EMIF03-SIM01F2
X2700
M-SK_200300331
N4200
LM2708H-1.35V_1.05V

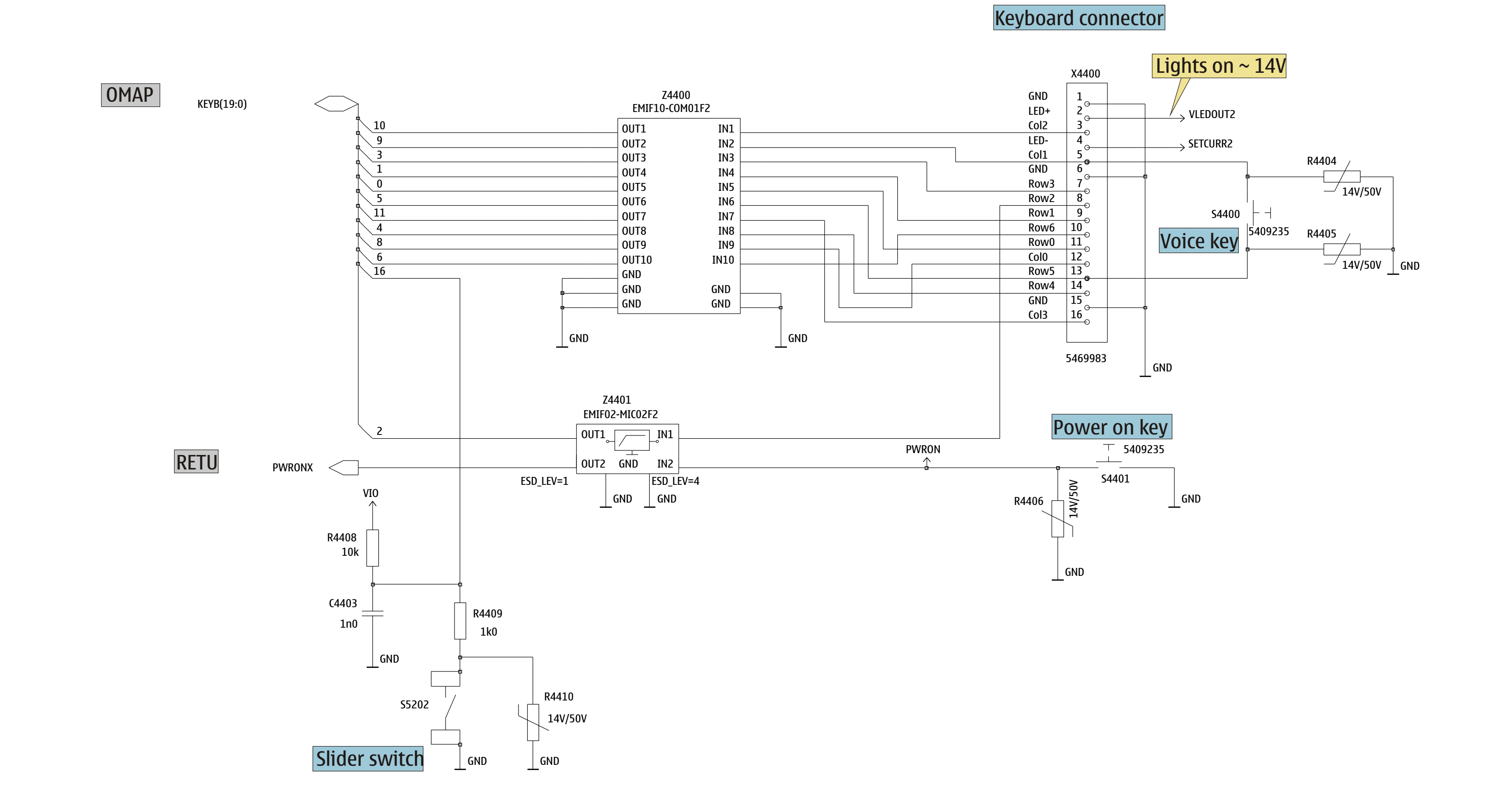

Flash interface
J2060
TAHVO
N2300
TAHVO_V4.1
4V
Local mode = 1.4V
4V
System connector
RETU
4V
System connector,
RETU
USB=3.5V
FBUS=2.5V
1.8V
OMAP
Current control
for keypad backlight
from keyboard
connector
RAP3G, RETU, OMAP, BT
RAP3G
RAP3G, RETU
4V
Lights on = ~ 0.7V
(Display & Keypad)
Accessory
connected = 2.5V
1.8V
11
USB connected=5V
from host
Current gauge
Power supply
for display
backlight
Power supply
for keypad
backlight
4V
Lights on ~ 14V
N2301
TK65600B-G
Lights on = 1.8V
Lights on = 0.7V
Current control
for display backlight
from display connector


RAP3G
D2800
RAP3G_V2.11
RF part
RETU, TAHVO, OMAP, Bluetooth
RF part
RETU
RETU, TAHVO
RETU
RETU
BT
OMAP, TAHVO
INTUSB(8:0)
RETU
RETU, TAHVO
OMAP
OMAP
1.4V
1.4V
1.8V
1.8V from RETU
SDRAM
64 Mbit SDRAM
D3001
K4M64163PH-VG1L
SDRAM_BA(1:0)
SDRAM_CTRL(10:0)
SDRAM_DA(15:0)
SDRAM_AD(15:0)
A10,F10,K10= VDRAM
A8,B1,C10,D1= VIO
A1,F1,K1= GND
A3,B10,C1,D10= GND
1.8V
1.8V
Flash
64 MBit NOR FLASH
D3000
K8S6415ETA-DI7B
MEMADDA(24:0)
MEMCONT(15:0)
A5= VIO
B1,D8= VIO
A7= VPP
A3,C1,B10,D3= GND

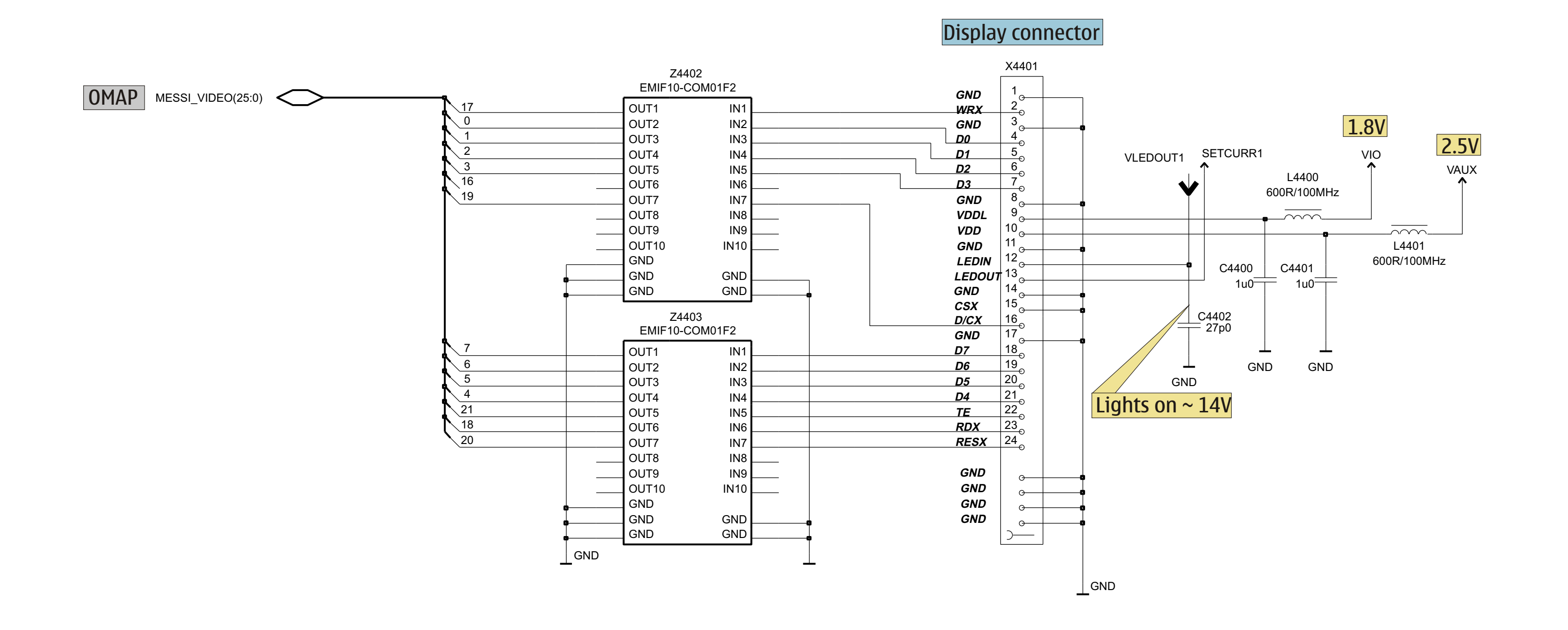


OMAP
Bluetooth
Combo memory
2.5V
Back camera connector
Flash LED
1.8V
Only if back camera activated
Any camera activated = 1.5V
4V
Camera regulator
Unpressed = 1.8V
Pressed = 0V
Any camera activated = 1.8V
MMC inserted = 1.8V
MMC
UI
RAP3G, TAHVO
RAP3G
Any camera activated = 1.5V
Front camera connector
Level shifter
1.8V
Local mode = 1.4V
Local mode = 1.8V
RETU, TAHVO, RAP3G, Bluetooth
RAP3G
Only if front camera activated = 2.8V
4V
Front camera regulator
Only if front camera activated = 1.8V
Local mode = 1.4V
Local mode = 1.4V
4V
Flash LED connector
Back camera
1.8V
Local mode = 1.4V
1.8V
1.8V
1.8V

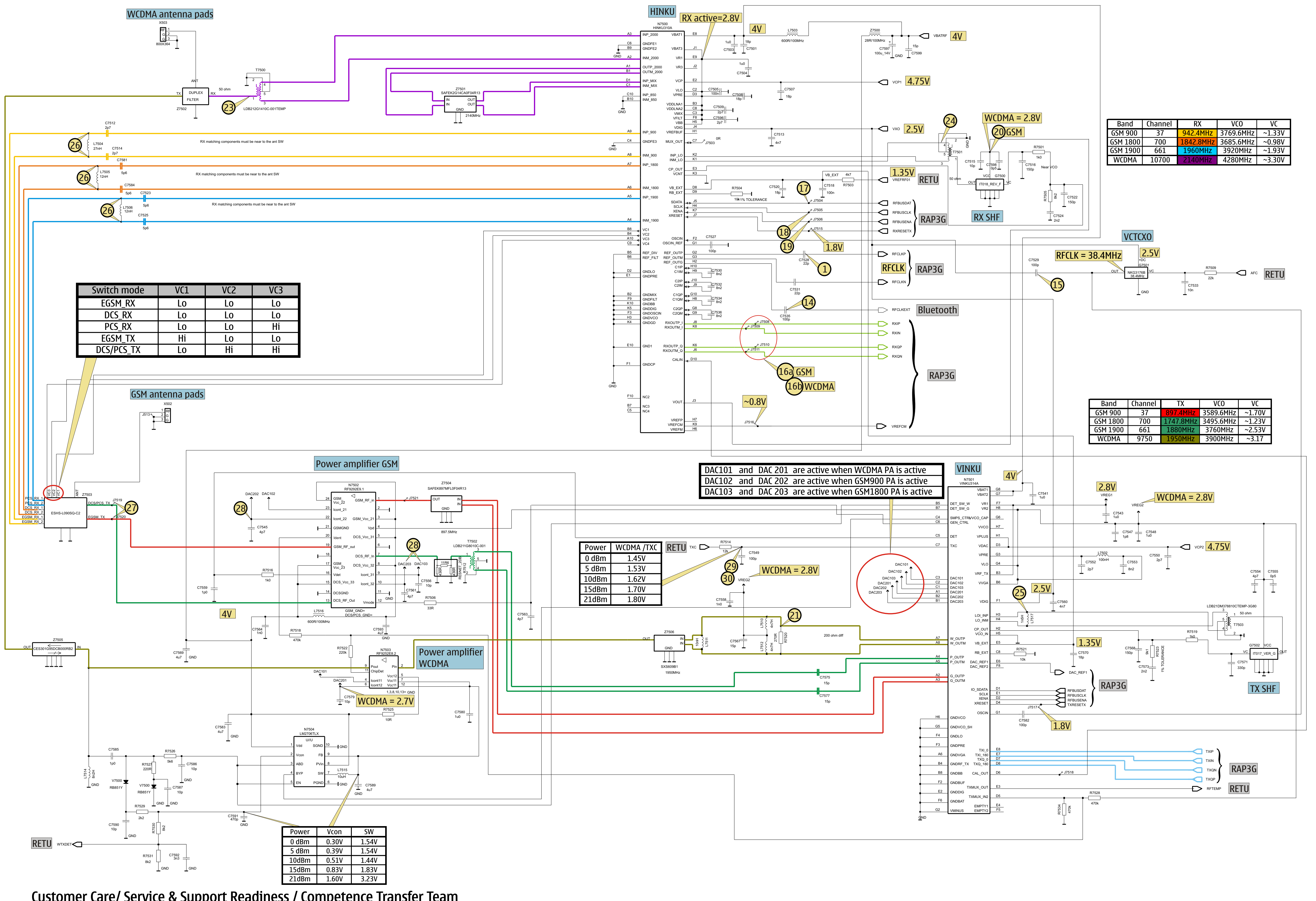




Keyboard connector
Lights on ~ 14V
OMAP
KEYB(19:0)
Z4400
EMIF10-COM01F2
X4400
VLEDOUT2
SETCURR2
R4404
14V/50V
S4400
5409235
Voice key
R4405
14V/50V
GND
5469983
Z4401
EMIF02-MIC02F2
RETU
PWRONX
PWRON
Power on key
5409235
S4401
ESD_LEV=1
ESD_LEV=4
R4406
VIO
R4408
10k
C4403
1n0
R4409
1k0
R4410
14V/50V
S5202
Slider switch



Display connector
X4401
OMAP
MESSI_VIDEO(25:0)
Z4402
EMIF10-COM01F2
Z4403
EMIF10-COM01F2
VLEDOUT1
SETCURR1
L4400
600R/100MHz
1.8V
VIO
2.5V
VAUX
L4401
600R/100MHz
C4400
1u0
C4401
1u0
C4402
27p0
Lights on ~ 14V
GND
WRX
D0
D1
D2
D3
VDDL
VDD
LEDIN
LEDOUT
CSX
D/CX
D7
D6
D5
D4
TE
RDX
RESX



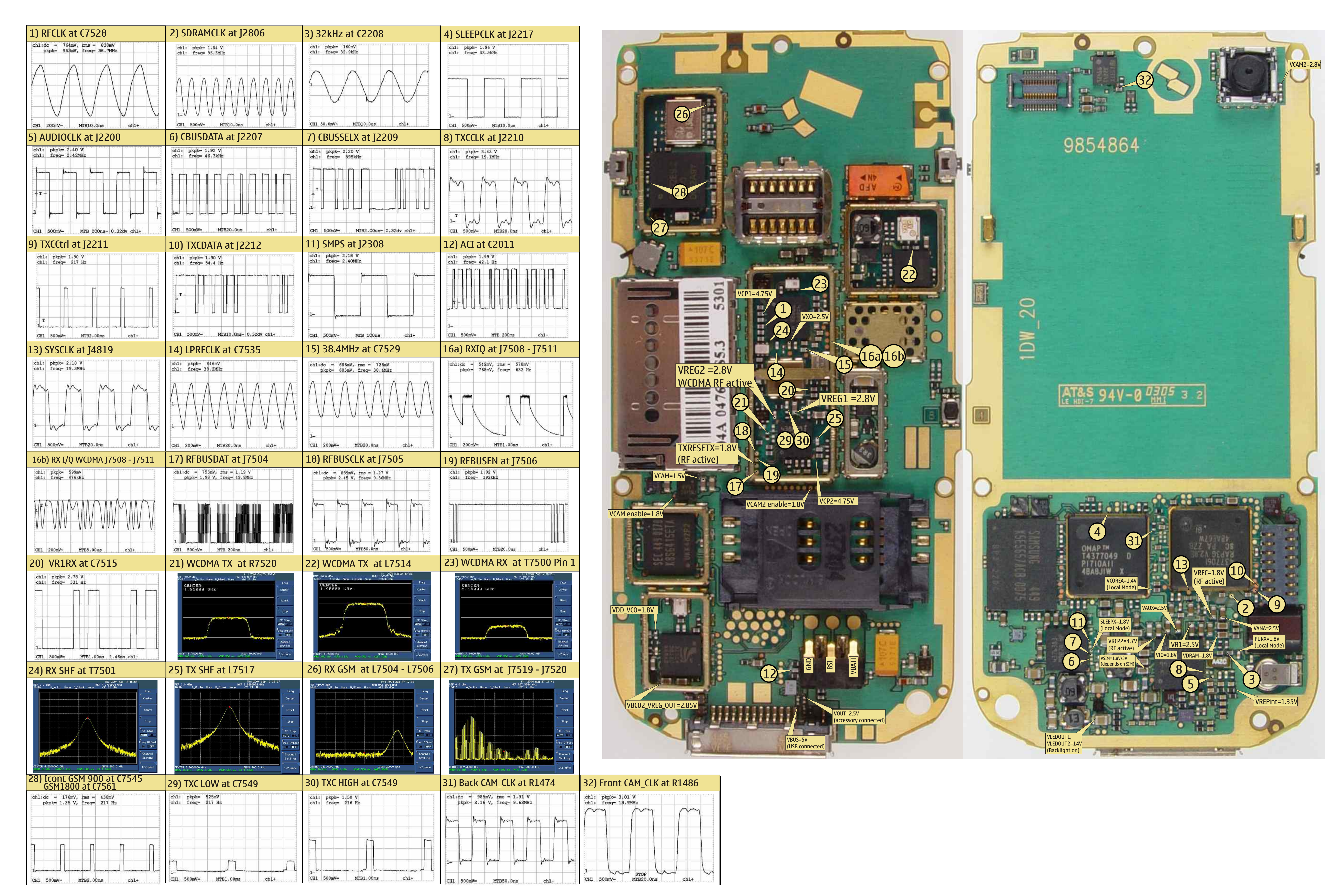
Band	Channel	RX	VCO	VC
GSM 900	37	942.4MHz	3769.6MHz	~1.33V
GSM 1800	700	1842.8MHz	3685.6MHz	~0.98V
GSM 1900	661	1960MHz	3920MHz	~1.93V
WCDMA	10700	2140MHz	4280MHz	~3.30V

Band	Channel	TX	VCO	VC
GSM 900	37	897.4MHz	3589.6MHz	~1.70V
GSM 1800	700	1747.8MHz	3495.6MHz	~1.23V
GSM 1900	661	1880MHz	3760MHz	~2.53V
WCDMA	9750	1950MHz	3900MHz	~3.17

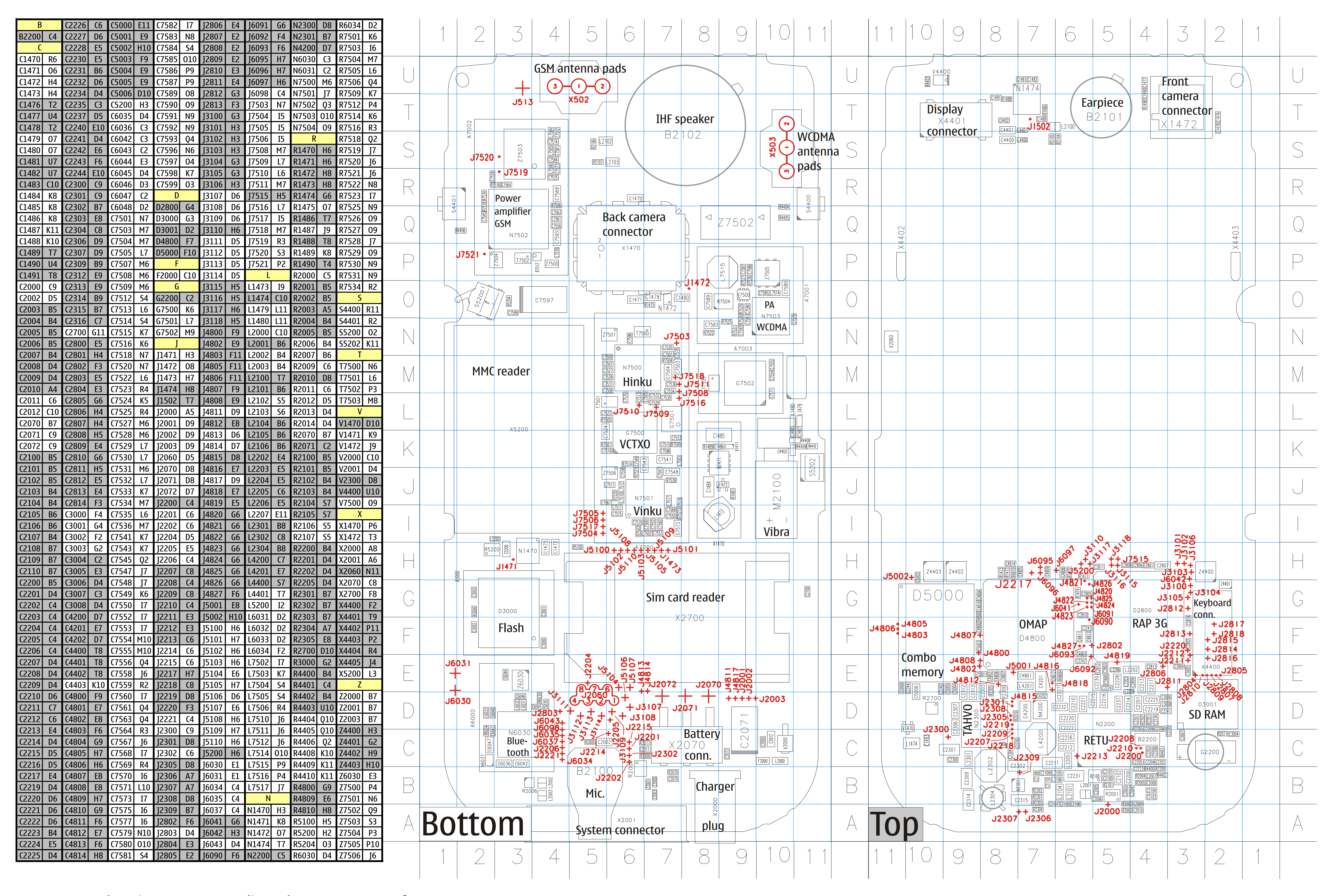
Switch mode	VC1	VC2	VC3
EGSM_RX	Lo	Lo	Lo
DCS_RX	Lo	Lo	Lo
PCS_RX	Lo	Lo	Hi
EGSM_TX	Hi	Lo	Lo
DCS/PCS_TX	Lo	Hi	Hi

Power	WCDMA /TXC
0 dBm	1.45V
5 dBm	1.53V
10dBm	1.62V
15dBm	1.70V
21dBm	1.80V

Power	Vcon	SW
0 dBm	0.30V	1.54V
5 dBm	0.39V	1.54V
10dBm	0.51V	1.44V
15dBm	0.83V	1.83V
21dBm	1.60V	3.23V



1) RFCLK at C7528
2) SDRAMCLK at J2806
3) 32kHz at C2208
4) SLEEPCLK at J2217
5) AUDIOCLK at J2200
6) CBUSDATA at J2207
7) CBUSSELX at J2209
8) TXCCLK at J2210
9) TXCCtrl at J2211
10) TXCDATA at J2212
11) SMPS at J2308
12) ACI at C2011
13) SYSCLK at J4819
14) LPRFCLK at C7535
15) 38.4MHz at C7529
16a) RXIQ at J7508 - J7511
16b) RX I/Q WCDMA J7508 - J7511
17) RFBUSDAT at J7504
18) RFBUSCLK at J7505
19) RFBUSEN at J7506
20) VR1RX at C7515
21) WCDMA TX at R7520
22) WCDMA TX at L7514
23) WCDMA RX at T7500 Pin 1
24) RX SHF at T7501
25) TX SHF at L7517
26) RX GSM at L7504 - L7506
27) TX GSM at J7519 - J7520
28) Icont GSM 900 at C7545
GSM1800 at C7561
29) TXC LOW at C7549
30) TXC HIGH at C7549
31) Back CAM_CLK at R1474
32) Front CAM_CLK at R1486
VCP1=4.75V
VXO=2.5V
VREG2 =2.8V
WCDMA RF active
VREG1 =2.8V
TXRESETX=1.8V
(RF active)
VCAM=1.5V
VCAM enable=1.8V
VCAM2 enable=1.8V
VCP2=4.75V
VDD_VCO=1.8V
VBCO2_VREG_OUT=2.85V
GND
BSI
VBATT
VOUT=2.5V
(accessory connected)
VBUS=5V
(USB connected)
VCAM2=2.8V
9854864
1DW_20
AT&S 94V-0
VCOREA=1.4V
(Local Mode)
VRFC=1.8V
(RF active)
VAUX=2.5V
SLEEPX=1.8V
(Local Mode)
VRCP2=4.7V
(RF active)
VSIM=1.8V/3V
(depends on SIM)
VIO=1.8V
VR1=2.5V
VDRAM=1.8V
VANA=2.5V
PURX=1.8V
(Local Mode)
VREFint=1.35V
VLEDOUT1,
VLEDOUT2=14V
(Backlight on)



B		C2226	C6	C5000	E11	C7582	I7	J2806	E4	J6091	G6	N2300	D8	R6034	D2
B2200	C4	C2227	D6	C5001	E9	C7583	N8	J2807	E2	J6092	F4	N2301	B7	R7501	K6
C		C2228	E5	C5002	H10	C7584	S4	J2808	E2	J6093	F6	N4200	D7	R7503	I6
C1470	R6	C2230	E5	C5003	F9	C7585	010	J2809	E2	J6095	H7	N6030	C3	R7504	M7
C1471	06	C2231	B6	C5004	E9	C7586	P9	J2810	E3	J6096	H7	N6031	C2	R7505	L6
C1472	H4	C2232	D6	C5005	E9	C7587	P9	J2811	E4	J6097	H6	N7500	M6	R7506	Q4
C1473	H4	C2234	D4	C5006	D10	C7589	08	J2812	G3	J6098	C4	N7501	J7	R7509	K7
C1476	T2	C2235	C3	C5200	H3	C7590	09	J2813	F3	J7503	N7	N7502	Q3	R7512	P4
C1477	U4	C2237	D5	C6035	D4	C7591	N9	J3100	G3	J7504	I5	N7503	010	R7514	K6
C1478	T2	C2240	E10	C6036	C3	C7592	N9	J3101	H3	J7505	I5	N7504	09	R7516	R3
C1479	07	C2241	D4	C6042	C3	C7593	Q4	J3102	H3	J7506	I5	R		R7518	Q2
C1480	07	C2242	E6	C6043	C2	C7596	N6	J3103	H3	J7508	M7	R1470	H6	R7519	J7
C1481	U7	C2243	F6	C6044	E3	C7597	04	J3104	G3	J7509	L7	R1471	H6	R7520	J6
C1482	U7	C2244	E10	C6045	D4	C7598	K7	J3105	G3	J7510	L6	R1472	H8	R7521	J6
C1483	C10	C2300	C9	C6046	D3	C7599	03	J3106	H3	J7511	M7	R1473	H8	R7522	N8
C1484	K8	C2301	C9	C6047	C2	D		J3107	D6	J7515	H5	R1474	G6	R7523	I7
C1485	K8	C2302	B7	C6048	D2	D2800	G4	J3108	D6	J7516	L7	R1475	07	R7525	N9
C1486	K8	C2303	E8	C7501	N7	D3000	G3	J3109	D6	J7517	I5	R1486	T7	R7526	09
C1487	K11	C2304	C8	C7503	M7	D3001	D2	J3110	H6	J7518	M7	R1487	J9	R7527	09
C1488	K10	C2306	D9	C7504	M7	D4800	F7	J3111	D5	J7519	R3	R1488	T8	R7528	J7
C1489	T7	C2307	D9	C7505	L7	D5000	F10	J3112	D5	J7520	S3	R1489	K8	R7529	09
C1490	U4	C2309	B9	C7507	M6	F		J3113	D5	J7521	P2	R1490	T4	R7530	N9
C1491	T8	C2312	E9	C7508	M6	F2000	C10	J3114	D5	L		R2000	C5	R7531	N9
C2000	C9	C2313	E9	C7509	M6	G		J3115	H5	L1473	I9	R2001	B5	R7534	R2
C2002	D5	C2314	B9	C7512	S4	G2200	C2	J3116	H5	L1474	C10	R2002	B5	S	
C2003	B5	C2315	B7	C7513	L6	G7500	K6	J3117	H6	L1479	L11	R2003	A5	S4400	R11
C2004	B4	C2316	C7	C7514	S4	G7501	L7	J3118	H5	L1480	L11	R2004	B4	S4401	R2
C2005	B5	C2700	G11	C7515	K7	G7502	M9	J4800	F9	L2000	C10	R2005	B5	S5200	02
C2006	B5	C2800	E5	C7516	K6	J		J4802	E9	L2001	B6	R2006	B4	S5202	K11
C2007	B4	C2801	H4	C7518	N7	J1471	H3	J4803	F11	L2002	B4	R2007	B6	T	
C2008	D4	C2802	F3	C7520	N7	J1472	08	J4805	F11	L2003	B4	R2009	C6	T7500	N6
C2009	D4	C2803	E5	C7522	L6	J1473	H7	J4806	F11	L2100	T7	R2010	D8	T7501	L6
C2010	A4	C2804	E3	C7523	R4	J1474	H8	J4807	F9	L2101	B6	R2011	C6	T7502	P3
C2011	C6	C2805	G6	C7524	K5	J1502	T7	J4808	E9	L2102	S5	R2012	D5	T7503	M8
C2012	C10	C2806	H4	C7525	R4	J2000	A5	J4811	D9	L2103	S6	R2013	D4	V	
C2070	B7	C2807	H4	C7527	M6	J2001	D9	J4812	E8	L2104	B6	R2014	D4	V1470	D10
C2071	C9	C2808	H5	C7528	M6	J2002	D9	J4813	D6	L2105	B6	R2070	B7	V1471	K9
C2072	C9	C2809	E4	C7529	L7	J2003	D9	J4814	D7	L2106	B6	R2071	C2	V1472	J9
C2100	B5	C2810	G6	C7530	L7	J2060	D5	J4815	D8	L2202	E4	R2100	B5	V2000	C10
C2101	B5	C2811	H5	C7531	M6	J2070	D8	J4816	E7	L2203	E5	R2101	B5	V2001	D4
C2102	B5	C2812	E5	C7532	L7	J2071	D8	J4817	D9	L2204	E5	R2102	B4	V2300	D8
C2103	B4	C2813	E4	C7533	K7	J2072	D7	J4818	E7	L2205	C6	R2103	B4	V4400	U10
C2104	B4	C2814	F3	C7534	M7	J2200	C4	J4819	E5	L2206	E5	R2104	S7	V7500	09
C2105	B6	C3000	F4	C7535	L6	J2201	C6	J4820	G6	L2207	E11	R2105	S7	X	
C2106	B6	C3001	G4	C7536	M7	J2202	C6	J4821	G6	L2301	B8	R2106	S5	X1470	P6
C2107	B4	C3002	F2	C7541	K7	J2204	D5	J4822	G6	L2302	C8	R2107	S5	X1472	T3
C2108	B7	C3003	G2	C7543	K7	J2205	E5	J4823	G6	L2304	B8	R2200	B4	X2000	A8
C2109	B7	C3004	C2	C7545	Q2	J2206	C4	J4824	G6	L4200	C7	R2201	D4	X2001	A6
C2110	B7	C3005	E3	C7547	J7	J2207	C8	J4825	G6	L4201	E7	R2202	D4	X2060	N11
C2200	B5	C3006	D4	C7548	J7	J2208	C4	J4826	G6	L4400	S7	R2205	D4	X2070	C8
C2201	D4	C3007	C3	C7549	K6	J2209	C8	J4827	F6	L4401	T7	R2301	B7	X2700	F8
C2202	C4	C3008	D4	C7550	I7	J2210	C4	J5001	E8	L5200	I2	R2302	B7	X4400	F2
C2203	C4	C4200	D7	C7552	I7	J2211	E3	J5002	H10	L6031	D2	R2303	B7	X4401	T9
C2204	C4	C4201	E7	C7553	I7	J2212	E3	J5100	H6	L6032	D2	R2304	A7	X4402	P11
C2205	C4	C4202	D7	C7554	M10	J2213	C6	J5101	H7	L6033	D2	R2305	E8	X4403	P2
C2206	C4	C4400	T8	C7555	M10	J2214	C6	J5102	H6	L6034	F2	R2700	D10	X4404	R4
C2207	D4	C4401	T8	C7556	Q4	J2215	C6	J5103	H6	L7502	I7	R3000	G2	X4405	J4
C2208	D4	C4402	T8	C7558	J6	J2217	H7	J5104	E6	L7503	K7	R4400	B4	X5200	L3
C2209	D4	C4403	K10	C7559	R2	J2218	C8	J5105	H7	L7504	S4	R4401	C4	Z	
C2210	D6	C4800	F9	C7560	I7	J2219	D8	J5106	D6	L7505	S4	R4402	B4	Z2000	B7
C2211	C7	C4801	E7	C7561	Q4	J2220	F3	J5107	E6	L7506	R4	R4403	U10	Z2001	B7
C2212	C6	C4802	E8	C7563	Q4	J2221	C4	J5108	H6	L7510	J6	R4404	Q10	Z2003	B7
C2213	E4	C4803	F6	C7564	R3	J2300	C9	J5109	H7	L7511	J6	R4405	Q10	Z4400	H3
C2214	D4	C4804	G9	C7567	J6	J2301	D8	J5110	H6	L7512	J6	R4406	Q2	Z4401	G2
C2215	D5	C4805	H7	C7568	I7	J2302	C6	J5200	H6	L7514	010	R4408	K10	Z4402	H9
C2216	D5	C4806	H6	C7569	R4	J2305	D8	J6030	E1	L7515	P9	R4409	K11	Z4403	H10
C2217	E4	C4807	E8	C7570	I6	J2306	A7	J6031	E1	L7516	P4	R4410	K11	Z6030	E3
C2219	D4	C4808	E8	C7571	L10	J2307	A7	J6034	C4	L7517	J7	R4800	G9	Z7500	P4
C2220	D6	C4809	H7	C7573	I7	J2308	D8	J6035	C4	N		R4809	E6	Z7501	N6
C2221	D6	C4810	G9	C7575	I6	J2309	B7	J6037	C4	N1470	H3	R4810	H8	Z7502	Q9
C2222	D6	C4811	F6	C7577	I6	J2802	F6	J6041	G6	N1471	K8	R5100	H5	Z7503	S3
C2223	B4	C4812	E7	C7579	N10	J2803	D4	J6042	H3	N1472	07	R5200	H2	Z7504	P3
C2224	E5	C4813	F6	C7580	010	J2804	E3	J6043	D4	N1474	T7	R5204	03	Z7505	P10
C2225	D4	C4814	H8	C7581	S4	J2805	E2	J6090	F6	N2200	C5	R6030	D4	Z7506	J6